**Introductory Array Assignment**  
This assignment provides practice creating a big array and loading data from many tables into it, next performing analysis. Try to have fun with this.

Scenario: You and some close friends have decided to take a post-graduation international travel adventure! After several conversations you still cannot decide on a location.

Being known as an analyst that can compile data and create new columns of metrics, which become the decision criteria to make informed decisions, you have been asked to analyze some data to help with the decision of vacation destination. The following six tables have been uploaded to cb-ot-devst06.ad.wsu.edu to start your analysis. (You may search out and upload different data). Notice the granularity of the data in each table is identical…country level.

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You are asked to create an array that loads the data together as shown below. Use an INSERT INTO SELECT FROM query to choose the columns from one of the tables, then use several UPDATE SET statements ro merge in columns of metrics from the remaining databae tables. Later on create new columns of metrics just by performing calculations of your own design.

As shown in the arrays examples you can use a WHERE statement that connects (JOINS) the array to the Country column of the database tables. While you don’t type the work JOIN, the WHERE statement can be used to JOIN the array to the database table to enable the new data to be accepted into the array (because there is a field in common – the country). Alternatively, you can find your own data and upload it to your database using procedures shown [here](https://www.youtube.com/watch?v=K5_u6Xrbl_s) and in similar videos.

The image below gives an idea of what the final dataset looks like. With the data integrated into the same array, the analyst can easy add new columns, use UPDATE SET statements to create new columns of ratios or metrics, and even CASE statements to put countries into categories such as (based on Median Age).

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**Procedure of this assignment**

1. Load the data from the provided database tables into an array
2. After you create an array, that holds all the columns shown above, add five new columns to your array. ***Either*** create new columns of metrics deriving new insights from a combination of the current columns ***or*** categorize the continuous data into new categories (i.e. grouping countries by GDP per capita because you want to go to a low GDP country where the hotel rooms are probably much less expensive).
3. Save the array to your database (you could finish the query with a SELECT \* INTO [dbo].[my new tablename] FROM). Check the sample code to see examples of this functionality.
4. Open PowerBI connect to your new database table and make 5 charts (on 5 separate tabs) which utilize your new column(s) of metrics as slicers or in the charts. Segment the data any way that interests you, for example compare several countries.
5. Screenshot copy each chart as a separate page in a word processing document (please crop the charts) and add a paragraph that explains the metric used and what that is a useful decision criteria to decide the vacation destination.
6. Merge together your insights to formulate the decision on vacation destination (i.e. we chose to include GDP per capita to guide our decision to go to a more affordable location, as Airbnb rates would probably be lower, than high GDP countries). At the end of your report, add your recommendation for top 3 vacation destinations, so that you give a variety of options to your group of friends.   
     
   Add a cover page and upload your report.   
     
   Higher grades given for completeness, professionalism, formatting and depth.  
     
   **Final note**: While you may argue that the data could have been brought into Excel quite easily, with just a few hours of copy/paste; this practice merging datasets into a big array is an important skill. The person that can build datasets (typically a DBA) enjoys much higher job security and pay than the Excel copy/paste/format workers.

DBA/Analysts can make themselves useful when reporting is automated using SQL processing. In practice, data can be transformed in a multitude of ways when it is integrated, allowing the creation of many new metrics, some of which would be difficult in Excel.   
  
Remember 99% of knowledge workers needing to produce insight are reliant on the 1% that can merge, and provide merged, sanitized datasets, complete with new columns of compiled analytics.